

Having thus described the invention, what is claimed is:

1. A decorative acoustic panel comprising:  
a main body formed of a first material having a first density;  
at least one peripheral edge formed of said first material and having a second density,  
said second density being greater than said first density; and  
a decorative surface.
2. The acoustic panel according to claim 1, wherein said decorative surface is positioned on a top surface of said main body and said at least one peripheral edge.
3. The acoustic panel of claim 1, wherein said main body and said at least one peripheral edge are formed from an acoustic substrate formed of a thermoplastic acoustic material.
4. The acoustic panel according to claim 3, wherein said acoustic material is a matrix of polyester staple and copolyester/polyester bicomponent fibers.
5. The acoustic panel according to claim 3, wherein said at least one peripheral edge is formed by compressing portions of said acoustic substrate to form compressed regions and rotating said compressed regions.

6. The acoustic panel according to claim 5, wherein said decorative surface is formed on a second material and is affixed to said acoustic panel after forming said at least one peripheral edge.

7. The acoustic panel according to claim 5, wherein said decorative surface is formed on a second material and is affixed to said acoustic substrate prior to forming said at least one peripheral edge.

8. The acoustic panel according to claim 5, wherein said decorative surface is integral with a major surface of said acoustic substrate and is applied prior to forming said at least one peripheral edge.

9. The acoustic panel according to claim 5, wherein said decorative surface is integral with a major surface of said acoustic substrate and is applied after forming said at least one peripheral edge.

10. An acoustic panel comprising:  
a main body; and  
a reinforcing edge on at least one side of said main body formed by compressing an adjacent outer region to form a compressed region that is rotated against said main body to form said reinforcing edge.

11. The acoustic panel of claim 10, wherein said reinforcing edge is formed on opposing sides of said main body.
12. The acoustic panel of claim 10, wherein each said reinforcing edge has a first density and said main body has a second density that is less than said first density.
13. The acoustic panel of claim 12, wherein a side of said main body and each said reinforcing edge includes a decorative design.
14. The acoustic panel of claim 13, wherein each said reinforcing edge is bonded to said main body through an application of heat to soften and bond adjacent fibers located in said reinforcing edge and said main body.
15. The acoustic panel of claim 13, wherein at least one of said reinforcing edges is double folded against said main body.
16. The acoustic panel of claim 13, wherein each said reinforcing edge extends equidistantly beyond said main body.
17. The acoustic panel of claim 13, wherein at least one of said reinforcing edges is folded flush with a back surface of said main body.

18. The acoustic panel of claim 16, wherein said reinforcing edges are formed on all sides of said main body from corresponding compressed regions.

19. The acoustic panel of claim 13, wherein reinforcing edge has a non-linear shape.

20. A method of forming a decorative acoustic panel having a reinforced edge comprising:

compressing a portion of an acoustic substrate having at least a first side including a decorative surface and a back side opposing said first side to form a void with at least one adjacent region of compressed material; and

manipulating said at least one adjacent region of compressed material to close said void and place said compressed material at an edge of said acoustical substrate to form a reinforced edge, said manipulation placing at least a portion of said decorative surface on a side of said acoustic substrate and forming an acoustic panel.

21. The method of claim 20, wherein said void is a groove that includes a fold point and said manipulating step comprises rotating said region of compressed material about said fold point toward said back side until said groove is closed.

22. The method of claim 20, further comprising:

heating said acoustic panel to bond adjacent fibers in said acoustic substrate; and  
cooling said acoustic panel to maintain a shape of said acoustic panel.

23. The method of claim 20, further comprising molding said acoustic panel into a desired shape.

24. The method of claim 20, wherein said acoustic substrate has a first density and said region of compressed material has a second density that is higher than said first density.

25. A method of forming a decorative acoustic panel having a reinforced edge comprising:

scoring an acoustical substrate having a decorative surface on at least a major side along a first score line to form a first outer region and an inner region, said acoustical substrate having a back side opposing said major side;

compressing said first outer region to form a first flange; and

rotating said first flange toward a back side of said acoustical substrate to form a reinforced edge, said rotation placing said decorative surface on said reinforced edge and forming an acoustic panel.

26. The method of claim 25, wherein said first flange is rotated until said first flange is flush with said inner region.

27. The method according to claim 26, further comprising removing a portion of said first flange at an intersection region of said first outer region and said inner region to facilitate rotation of said first flange toward said back side of said acoustical substrate.
28. The method according to claim 27, wherein said removed portion is a first notch having a first fold point.
29. The method according to claim 28, wherein said rotating step comprises rotating said first flange toward said back side about said first fold point.
30. The method according to claim 25, further comprising removing a portion of said inner region to form a nesting region to receive said first flange.
31. The method according to claim 25, wherein said first flange has a length dimension greater than a width dimension of said acoustical substrate, and wherein when said first flange is rotated flush with said inner region, a first portion of said first flange extends beyond said width dimension of said acoustical substrate.
32. The method according to claim 31, further comprising rotating said first portion of said first flange toward said back side until said first portion is flush with said back side.

33. The method according to claim 25, wherein said first flange has a length dimension that is equal to a width dimension of said acoustical substrate.

34. The method according to claim 33, further comprising scoring said acoustical substrate along a second score to form a second outer region and compressing said second outer region to form a second flange.

35. The method according to claim 34, further comprising rotating said second flange toward said back side of said acoustical substrate until said second flange is flush with said inner region and said decorative surface is placed on a second side of said acoustical substrate.

36. The method according to claim 35, wherein said second flange has a length dimension greater than a width dimension of said acoustical substrate, and wherein when said second flange is rotated flush with said inner region, a second portion of said second flange extends beyond said width dimension of said acoustical substrate.

37. The method according to claim 36, further comprising rotating said second portion of said second flange toward said back side until said second portion is flush with said back side.

38. The method according to claim 25, wherein said first flange includes an inner and an outer portion.

39. The method according to claim 38, wherein said rotating step comprises:  
rotating said outer portion of said first flange toward said back side until said outer portion is flush with said inner portion to form a folded flange; and  
rotating said folded flange toward said back side until said folded flange is flush with said inner region.

40. The method of claim 25, wherein said acoustic substrate has a first density and said compressed material has a second density that is higher than said first density.

41. A method of forming an acoustic panel from an acoustic substrate formed of acoustic material having an upper side including a decorative surface thereon comprising:  
compressing a perimeter region of said acoustic substrate to form a central core of said acoustic material having a first density and a perimeter flange of said acoustic material having a second density greater than said first density, said central core including first, second, third and fourth sides;  
sizing said perimeter flange such that said perimeter flange has a width dimension substantially equal to a corresponding one of said sides, said perimeter flange having said decorative surface on an upper side thereof; and  
folding said perimeter flange relative to said central core so that said perimeter flange



is positioned with said decorative surface oriented substantially perpendicularly to said upper side of said central core, said folded perimeter flange forming a reinforcing edge for said acoustic panel.

42. The method of claim 41, wherein said compressing step forms said perimeter flange extending substantially completely around said central core.

43. The method of claim 42, wherein said sizing step comprises:  
removing a corner portion of said perimeter flange adjacent two of said sides; and  
repeating said removing step until all corner portions of said perimeter flange have been removed, leaving perimeter flange members with a width dimension corresponding to corresponding said sides of said central core.

44. The method of claim 43, wherein each said perimeter flange member has a length dimension greater than said thickness of said central core such that after said folding step said perimeter flange members extend below said bottom surface of said central core.

45. The method of claim 44, wherein said perimeter flange members have identical length dimensions such that after said folding step said perimeter flange members terminate in a common plane oriented generally parallel to said bottom surface, said perimeter flange members defining an open cavity surrounded by said folded perimeter flange members and terminating against said bottom surface of said central core.

46. The method of claim 45, further comprising:

inserting a frame member into said open cavity for attachment to said folded perimeter flange members.